SERVICE MANUAL

# SD283

4822 725 50879

marantz®

model SD283

*Cassette Tape Deck*

## MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.
Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

### ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified.
The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

MARANTZ INTERNATIONAL
Vestdijk 9
5600 MD Eindhoven
The Netherlands
Phone: +31/40.758290
Telefax: +31/40.75.82.99
Telex: 35000 PHTC NL routing IND NLMTFAT

### PARTS ORDERING

Parts may be ordered at the following addresses:

**AUSTRIA**
HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

**BELGIUM**
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

**CHILE**
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

**DENMARK**
MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

**FINLAND**
MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

**FRANCE**
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

**GERMANY**
MARANTZ GERMANY GmbH
Max-Planck-Strasse 22
6072 Dreieich 1
Germany
Telex: 529821

**THE NETHERLANDS**
Elpro Marantz
Wint Hontlaan 28
3526 KV Utrecht
The Netherlands
Telex: 4748

**NORWAY**
MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
0680 Oslo 6
Norway
Telex: 72640

**GREAT BRITAIN**
MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

**GREECE**
SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocratus Street 188
Athens 11471
Greece
Telex: 216.795

**JAPAN**
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

**KUWAIT**
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

**ITALY**
MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

**SAUDI ARABIA**
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 401530

**SOUTH AFRICA**
MARANTZ
DIVISION OF PHILIPS S.A.
Main Road Martindale
P.O. Box. 58088
Newville 21114
South Africa

**SPAIN**
PHONO S.A.
Ignacio Iglesias 10
Badalona (Barcelona)
Spain
Telex: 59355

**SWEDEN**
MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

**SWITZERLAND**
DYNAVOX ELECTRONICS
Route de Villars 105
1701 Fribourg
Switzerland
Telex: 942377

**TURKEY**
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

**MALTA**
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

**PORTUGAL**
MARANTZ
Divisao philips S.A. service
Outurela-carnaxide
2795 LinDA-A-VELHA
Telex: 43906

**All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.**

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

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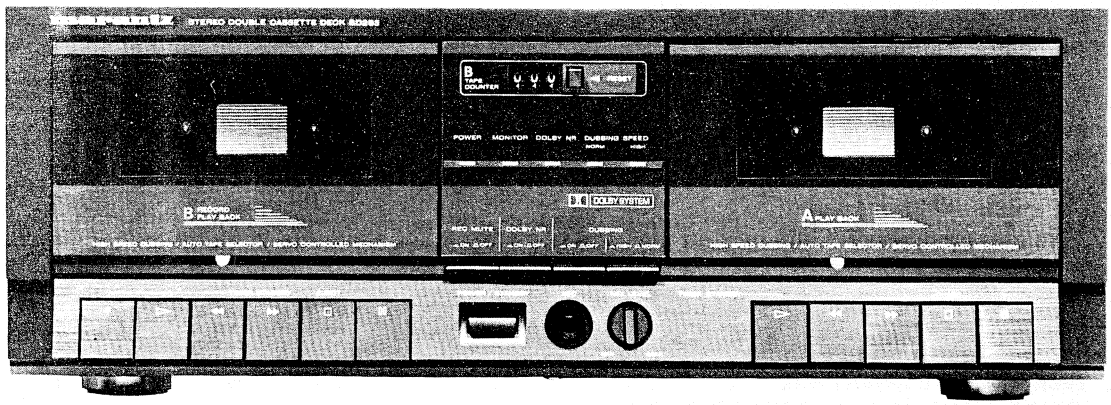
### How to use this service manual

- The "Common parts" which Marantz Japan, Inc. has established are eliminated from this service manual.
- These "Common parts" are applied to all models in the service manuals arranged and issued by MJI.
- To indicate clearly the common parts in the schematic diagram, a line is drawn above or under the Ref. Desig. No. of applicable parts.
- "Common parts" can be supplied from the Marantz service center as ever.
  In case of ordering, please establish the parts number of 12 N/C'S following the procedure mentioned in this service manual "How to establish the parts number for common parts".

1) Please correctly write the parts number of 12 N/C'S following the rule.

# CASSETTE TAPE DECK



**Model SD283**

## 1. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of your Cassette Tape Deck consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. REC/PLAY Amp . . . . . mounted on P.W. Board P100
2. LED Meter . . . . . mounted on P.W. Board P200
3. Output . . . . . mounted on P.W. Board P300
4. Selector Switch . . . . . mounted on P.W. Board P400

# 2. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking your Cassette Deck, the following instruments and materials are necessary.

- VTVM
- Audio Oscillator (AF OSC)
- Attenuator (600 Ω)
- Oscilloscope
- Bandpass Filter (1 kHz)
- IEC A-Curve Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Distortion Meter
- Blank Tapes (Completely erased with bulk eraser)
  TDK AC-212 (Normal)
  TDK AC-512 (Special/$CrO_2$)
  TDK AC-712 (Metal)

**NOTE:**
**If any doubt is noted in a measured value, use new tape.**

- Test Tapes (New Tape)

| | |
|---|---|
| TCC-111•MTT-111 | Wow and Flutter, Tape Speed |
| TCC-140•MTT-112B | Signal-to-Noise Ratio |
| TCC-130•MTT-150C | Adjustment of Output Level |
| TCC-161•MTT-257WT | Frequency Response (for Normal) |
| TCC-261•MTT-357WT | Frequency Response (for Special/ $CrO_2$ and Metal) |
| TCC-192•MTT-121 | Cross Talk |
| TCC-194•MTT-141 (A-BEX)•(TEAC) | Channel Separation |

# 3. MECHANICAL ADJUSTMENT AND CHECKS

## 3.1 WOW AND FLUTTER

**Note:**
**This measurement should be made at the begining, middle, and the end of the tape.**

### PLAYBACK

1. Connect a wow-and-flutter meter to the deck.
2. Load and play a TEAC MTT-111 test tape.
3. Check that the reading on the wow-and-flutter meter is within 0.12% (WRMS).

## 3.2 TAPE SPEED

1. Connect a frequency counter to the deck.
2. Simply press POWER switch to ON to rotate the motor, then continue the motor rotation for approx. 1 minute for warm-up.
3. As soon as the warm-up finishes, load a TEAC MTT-111 test tape with a 3,000Hz test tone and play the end of the test tape.
4. Adjust each variable resistor to get the following figures.

| | Adjustment point | | Adjustment value (Hz) |
|---|---|---|---|
| DECK A | HIGH speed | R031 | 6,020 ~ 6,040 |
| | LOW speed | R032 | 3,010 ~ 3,020 |
| DECK B | HIGH speed | R033 | 6,000 ~ 6,020 |
| | LOW speed | R034 | 3,000 ~ 3,010 |

**Note:**
*** At first, adjust LOW speed.**
*** To adjust the high speed, connect pin 13 short and set the deck to the play mode.**

5. In play mode, check that the following figures are obtained at the beginning and at the end of the tape.

| | LOW speed | HIGH speed |
|---|---|---|
| **Speed deviation** | 3000Hz + 90, -90Hz | 6000Hz + 180, -180Hz |
| **Speed drifting** | Within 45Hz | Within 90Hz |

## 3.3 REEL TORQUE

* Load the cassette torque meter on the deck and read the pointer indication on the dial scale for each tape transport operation. The measured torque should be within the following specified values:

Specifications:
Take up: 35 ~ 75 g-cm
Supply: 2 ~ 6 g-cm
F.F./REW: 70 ~ 160 g-cm

## 3.4 DRIVING TORQUE

* Load the cassette torque meter on the deck and read the pointer indication on the dial scale for each tape transport operation. The measured torque should be within the following specified value:

Specification: 90 g-cm or more.

# 4. ELECTRICAL ADJUSTMENT AND CKECKS

## 4.1 ADJUSTMENTS AND TEST POINT LOCATIONS

| Function | Adjustments | Test points |
|---|---|---|
| Specified output level | R011/R021 [DECk A]<br>R012/R022 [DECK B] | Output terminals |
| Bias OSC | L302 [DECK B] | R101/R201 [DECK B] |
| Record bias | R014/R024 [DECK B] | Output terminals |
| Record level | R013/R023 [DECK B] | Output terminals |

## 4.2 PLAYBACK PERFORMANCE

| Item | Setting | Input signal | Adjust | Measuring point result | Remark |
|---|---|---|---|---|---|
| **1. REC/PLAY head azimuth** | – | MTT-150C | CHECK | OUTPUT: Fig.: 1<br>Phase: within 45° | |
| | | MTT-257WT [10kHz] | Azimuth screw of R/P Head | OUTPUT:<br>Max. output at L&R-ch's (on VTVM) | |
| **2. Specified output level** | – | MTT-150C | R011/R021 (DECK A)<br>R012/R022 (DECK B) | OUTPUT:<br>-3dB±1dB | Spec. output level |
| **3. Frequency response** | NORMAL | MTT-257WT | CHECK | OUTPUT:<br>Fig. 2-1 | |
| | $CrO_2$ | MTT-357WT | CHECK | OUTPUT:<br>Fig.: 2-1 | |
| **4. Signal-to-noise ratio** | Fully erased tape | Fully erased tape | CHECK | OUTPUT:<br>45dB min. | Ratio of spec. output -3.5dB to noise |
| **5. Mic output level** | PLAY + PAUSE | 400Hz -62.2dB | CHECK | OUTPUT:<br>-3.5dB±3dB | |

## 4.3 MONITOR PERFORMANCE

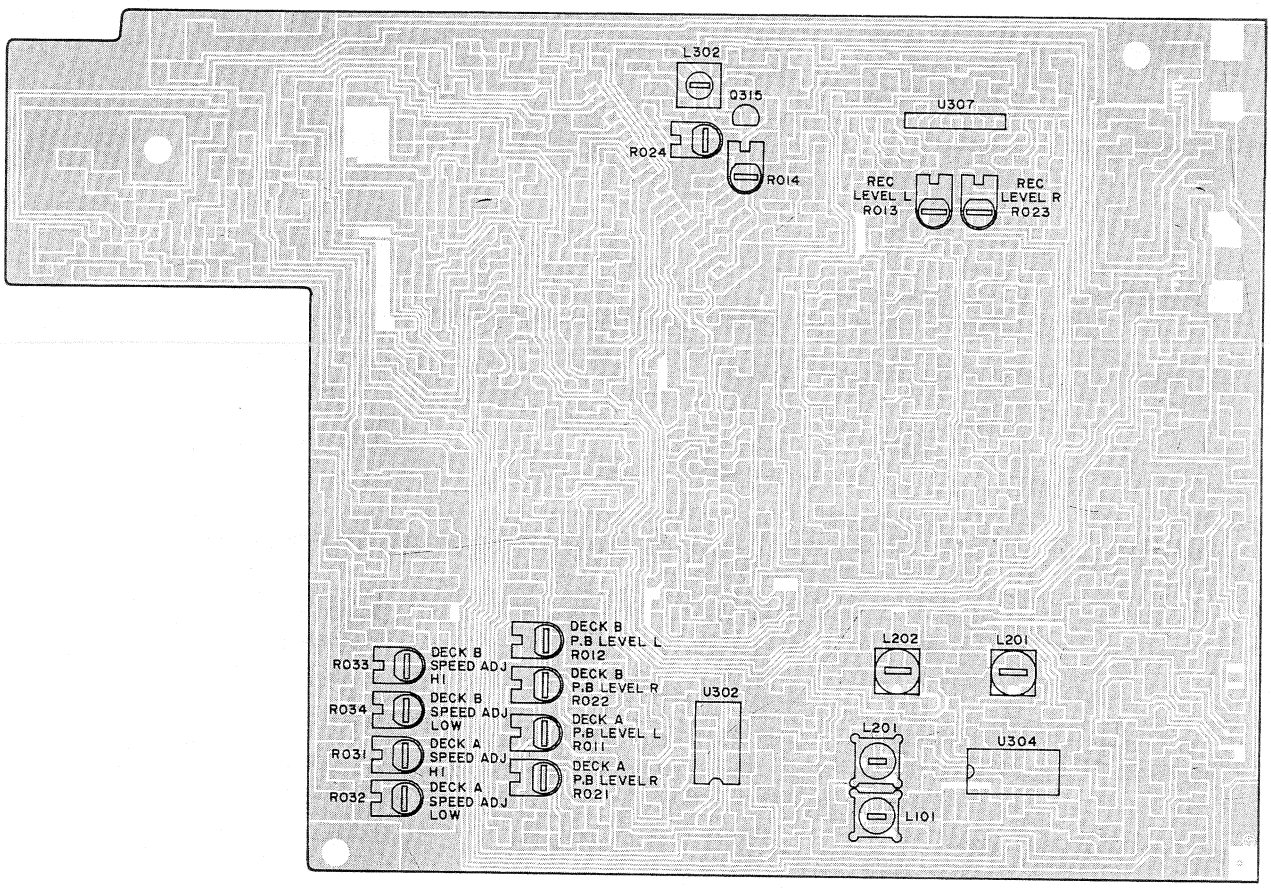
| Item | Setting | Input signal | Adjust | Measuring point result | Remark |
|---|---|---|---|---|---|
| **6. Specified line input level** | | Line in:<br>400Hz/-10.8dB | Recording level cont. (L/R) | OUTPUT:<br>-3.5dB | |
| | IMPORTANT: Do not change the setting of the RECORDING LEVEL controls after establishing their setting as above. | | | | |
| **7. Monitor LED display** | | Line in:<br>400Hz/-18±4dB | CHECK | LED (Brighten) | |

## 4.4 RECORDING PERFORMANCE

| Item | Setting | input signal | Adjust | Measuring point result | Remark |
|---|---|---|---|---|---|
| **8. Bias osc** | Record-pause mode | LIN IN: No signal | L302 | R101/R201 100kHz on frequency counter | Spec. bias frequency |
| **9. Record bias** | Tape: TDK AC-212 Rec/play mode | LINE IN: 400Hz & 10kHz/ -43.8dB Record and re-produce them | R014/R024 | OUTPUT: Nearly equal level at both trequencies | Repeat if the result is unsatis-factory |
| **10. Record level** | Tape: TDK AC-212 | LINE IN: 400Hz/-13.8dB Record and re-produce them | R013/R023 | OUTPUT: -6.5dB | |
| **11. Total hatmonic distortion** | Tape: TDK AC-712 TDK AC-512 TDK AC-212 Rec/play mode | LINE IN: 400Hz/-13.8dB | CHECK | OUTPUT: 2.5% or less with $CrO_2$, METAL 2% or less with NORMAL | |
| **12. Frequency response** | Tape: TDK AC-712 TDK AC-512 TDK AC-212 | LINE IN: Required Signal/ -43.8dB | CHECK | OUTPUT: Fig.: 2-2 ~ 2-3 | If out of spec., recheck #10 |
| **13. Signal-to-noise ratio** | Tape: TDK AC-712 TDK AC-512 TDK AC-212 | LINE IN: 400Hz/-10.8dB → no signal | CHECK | OUTPUT: 46dB min. (Metal, $CrO_2$) 45dB min. (NORMAL) | Ratio of spec. output of -3.5dB |
| **14. Erase efficency** | Engage 1kHz filter. Record a 1-kHz signal. Rewind tape to midpoint of recorded portion. Erase the recorded portion with no input signal. Find the difference between the 1-kHz portion and the "no-signal" portion. | | | | |
| | Tape: TDK AC-712 | LINE IN: 1kHz/-0.8dB → no signal | CHECK | OUTPUT: 65dB min. ratio | |
| **15. Channel seperation** | * Do not connect LINE IN (R), and engage 1-kHz filter. * Set the deck to record mode. Find the difference between the 1-kHz record portion (L-ch) and the "no signal" portion (R-ch). | | | | |
| | Tape: TDK AC-512 ($CrO_2$) | LINE IN: L-ch 1kHz/ -10.8dB R-ch no signal | CHECK | OUTPUT: 30dB min. ratio | |
| **16. Adjacent track cross-talk** | * Do not connect LINE IN (L) and OUTPUT (L). * Record a 125Hz signal on R-ch and note output level. Invert tape and play R-ch track. Check leakage level against the output reference of previously recorded portion. | | | | |
| | Tape: TDK AC-512 | LINE IN: L-ch no signal R-ch 125Hz/ -10.8dB | CHECK | OUTPUT: 40dB min. ratio | |

| Item | Setting | input signal | Adjust | Measuring point result | Remark |
|---|---|---|---|---|---|
| **17. Dolby NR effect (B-type)** | * Record a 1-kHz signal with DOLBY NR IN/OUT switch in OUT and Dolby NR Type Selector switch in B-NR. Play this portion with DOLBY NR IN/OUT switch set to OUT and IN. Obtain the difference in output level between OUT and IN positions. Repeat the above process using a 10-kHz signal. | | | | |
| | Tape sw: METAL Tape: TDK AC-712 | LINE IN: 1kHz/-30.8dB | CHECK | OUTPUT: Variation 3dB ~ 8dB | |
| | Tape sw: METAL Tape: TDK AC-712 | LINE IN: 10kHz/-40.8dB | CHECK | OUTPUT: Variation 8dB ~ 12dB | |

P100



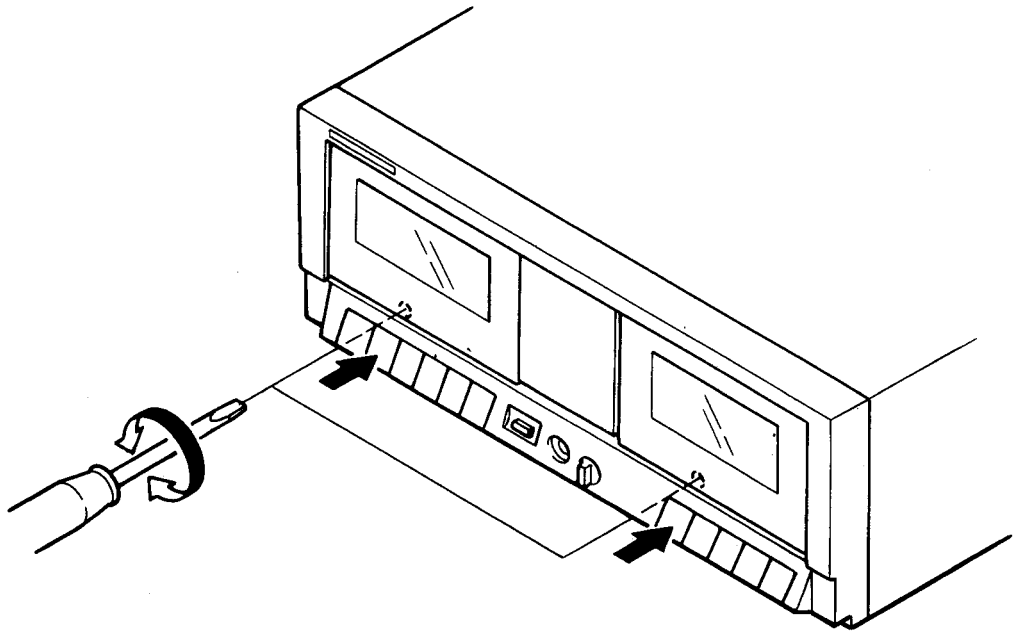


Fig. 1 Head azimuth adjustment

**PLAYBACK**
Tape: MTT-257 (NORMAL)
Tape: MTT-357 ($CrO_2$/METAL)

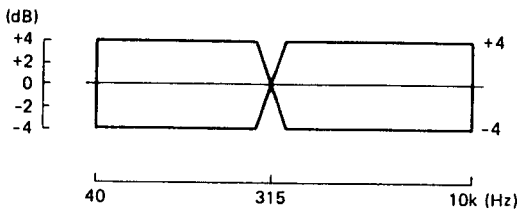



Fig.: 2-1 Playback frequency response

**OVERALL**
Tape: AC-212 (NORMAL)
Tape: AC-512 ($CrO_2$)
Tape: AC-712 (METAL)

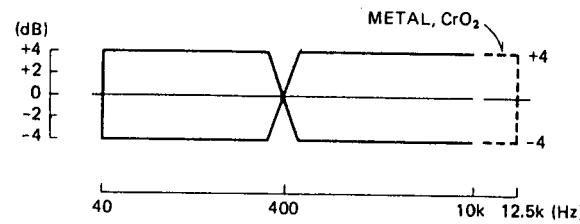



Fig. 2-2 Overall frequency response (Dolby NR: OUT, B, C)

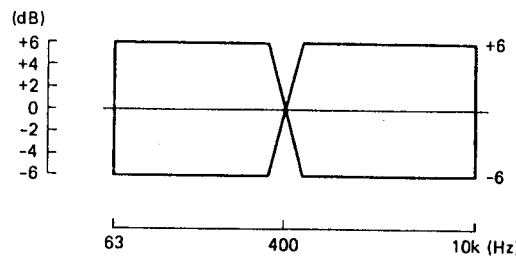
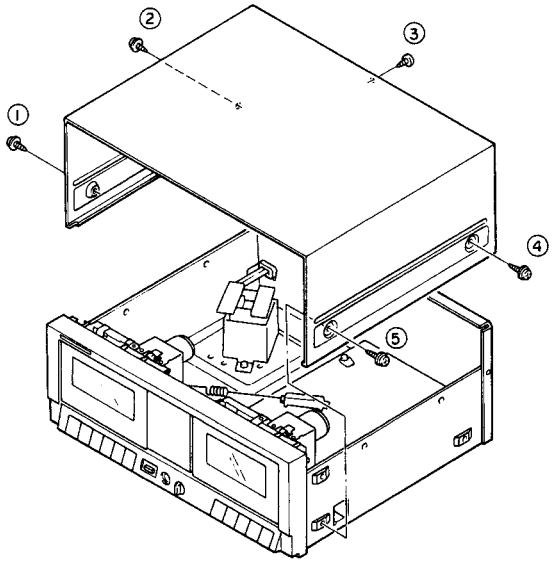



Fig. 2-3 Overall frequency response (Dubbing: Low/High speed)

# 5. DISASEMBLY

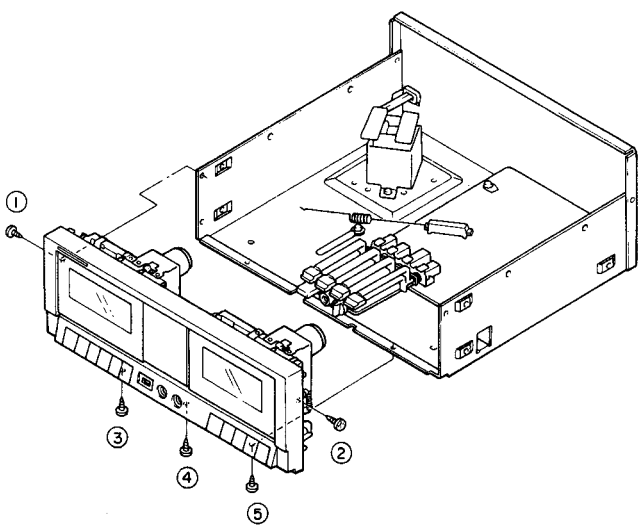
## 5.1 REMOVING THE TOP COVER

Remove the 5 screws 1 ~ 5



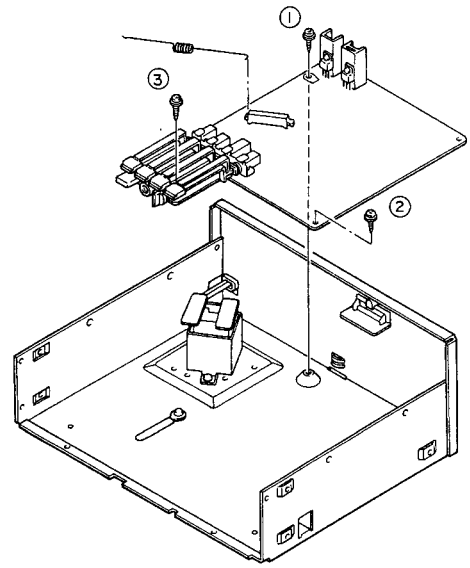

## 5.2 REMOVING THE FRONT PANEL

Remove the 5 screws 1 ~ 5



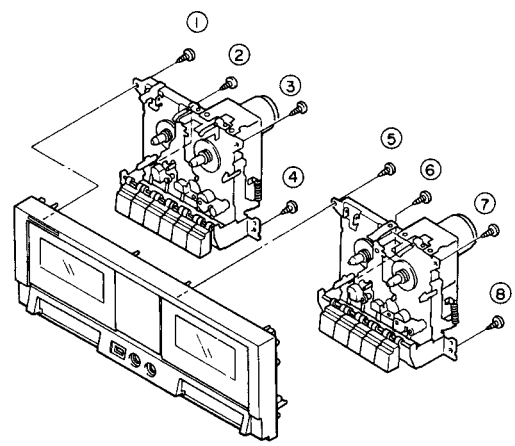

## 5.3 REMOVING THE MAIN P.W. BOARD

Remove the 3 screws 1 ~ 3



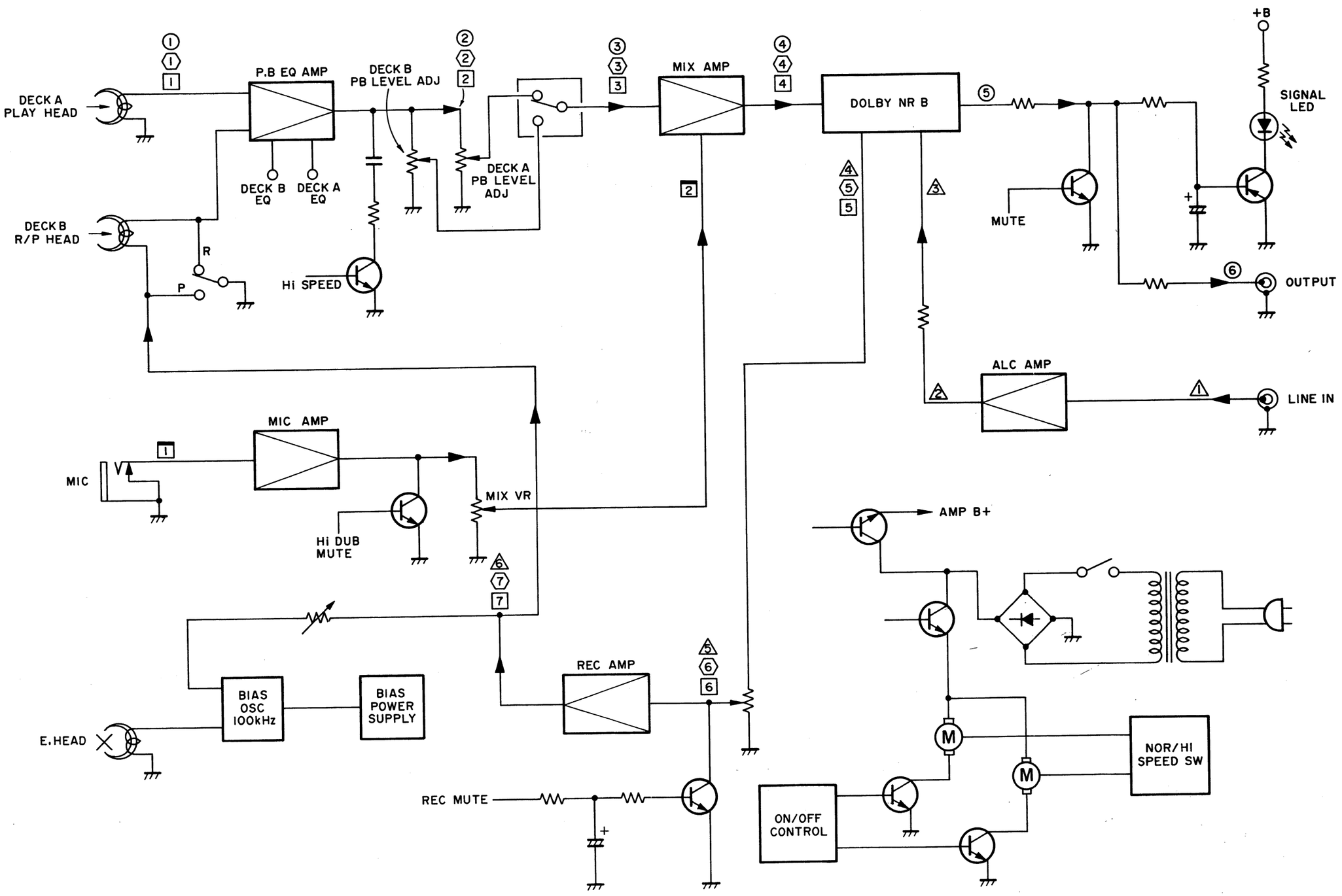

## 5.4 REMOVING THE MECHANISM

Remove the 8 screws 1 ~ 8



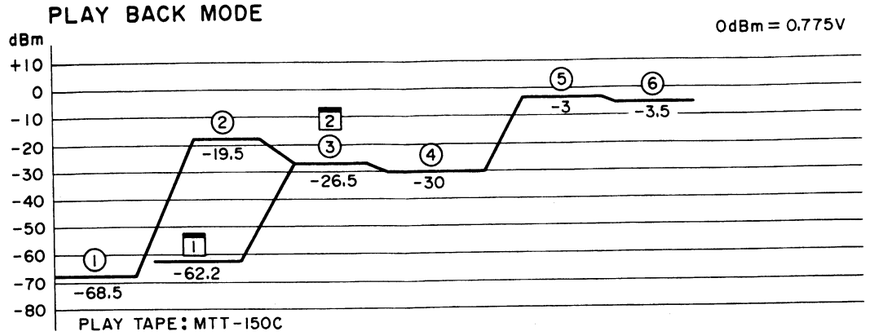
# 6. BLOCK AND LEVEL DIAGRAM

## 6.1 BLOCK DIAGRAM

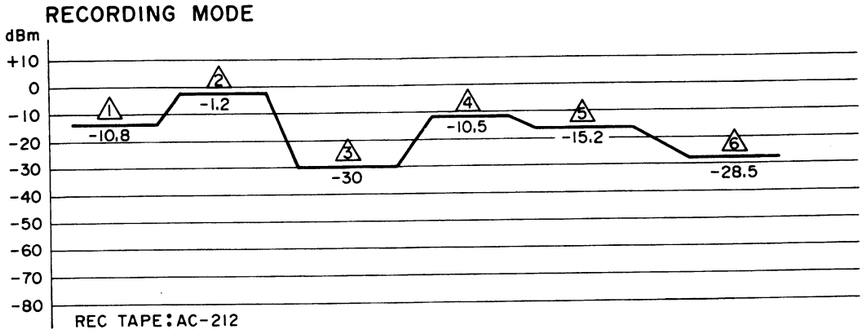


6.2 LEVEL DIAGRAM

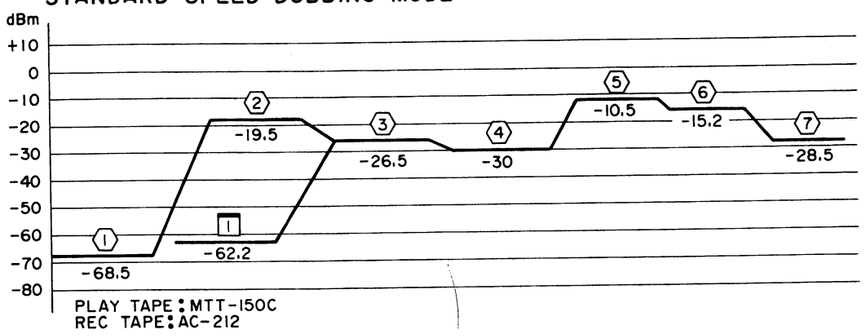
PLAY BACK MODE



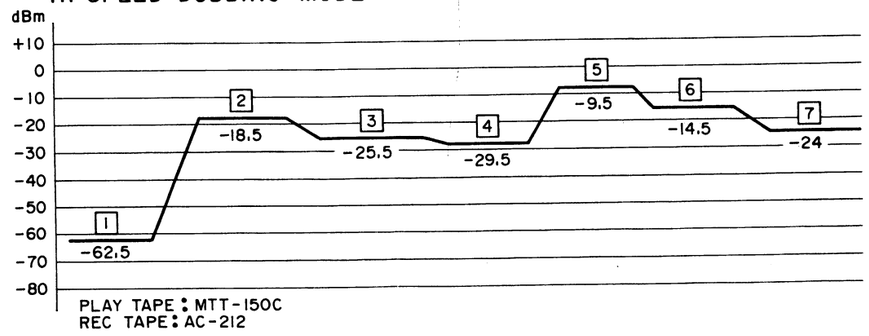

RECORDING MODE




STANDARD SPEED DUBBING MODE




HI SPEED DUBBING MODE






# 7. TECHNICAL SPECIFICATIONS

Type ..... Dual Dubbing
Tape Drive System ..... Single Capstan Drive
Tape Type ..... Philips type compact cassette
Track System ..... 4-track 2-channel
Tape Speed ..... 1-7/8 ips

Heads
- Tape A ..... 1 Head System
  - Playback ..... Permalloy
- Tape B ..... 2 Head System
  - Record/Playback ..... Permalloy
  - Erase ..... Dual Gap Ferrite

Wow and Flutter (WRMS, 1-7/8 ips) ..... 0.03%

Frequency Response (Overall -25 dB below Dolby Level ±3 dB):
- Normal Tape ..... 35 Hz ~ 14 kHz
- $CrO_2$ Tape ..... 35 Hz ~ 15 kHz
- Metal Tape ..... 35 Hz ~ 16 kHz

Signal-to-Noise Ratio
- NR OFF ..... 52 dB
- With Dolby B NR ..... 60 dB
- With Dolby C NR ..... 68 dB

Output Level/Impedance
- Line ..... 600 mV/2.5 k ohms
- Headphone ..... 80 mV/40 k ohms

Input Sensitivity/Impedance
- Line ..... 70 mV/75 k ohms
- Microphone ..... 0.8 mV/4.7 k ohms

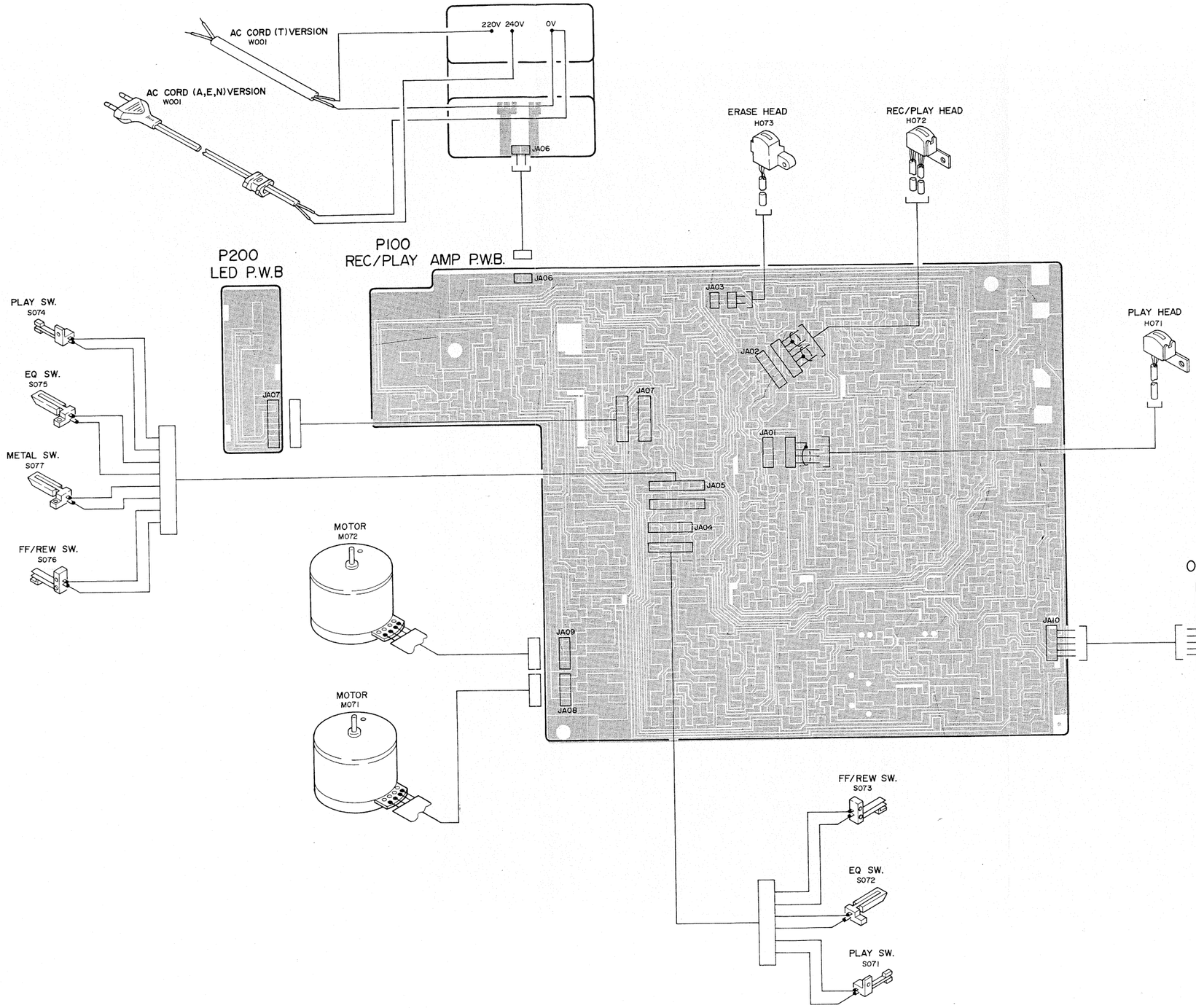
GENERAL
Power Requirements ..... 120 V AC, 60 Hz

Dimensions (includes feet and knobs):
- Width ..... 16-1/2 inches (420 mm)
- Height ..... 5 inches (128 mm)
- Depth ..... 10-1/2 inches (268 mm)

Weight
- Unit Alone ..... 10.5 lb. (4.8 kg)

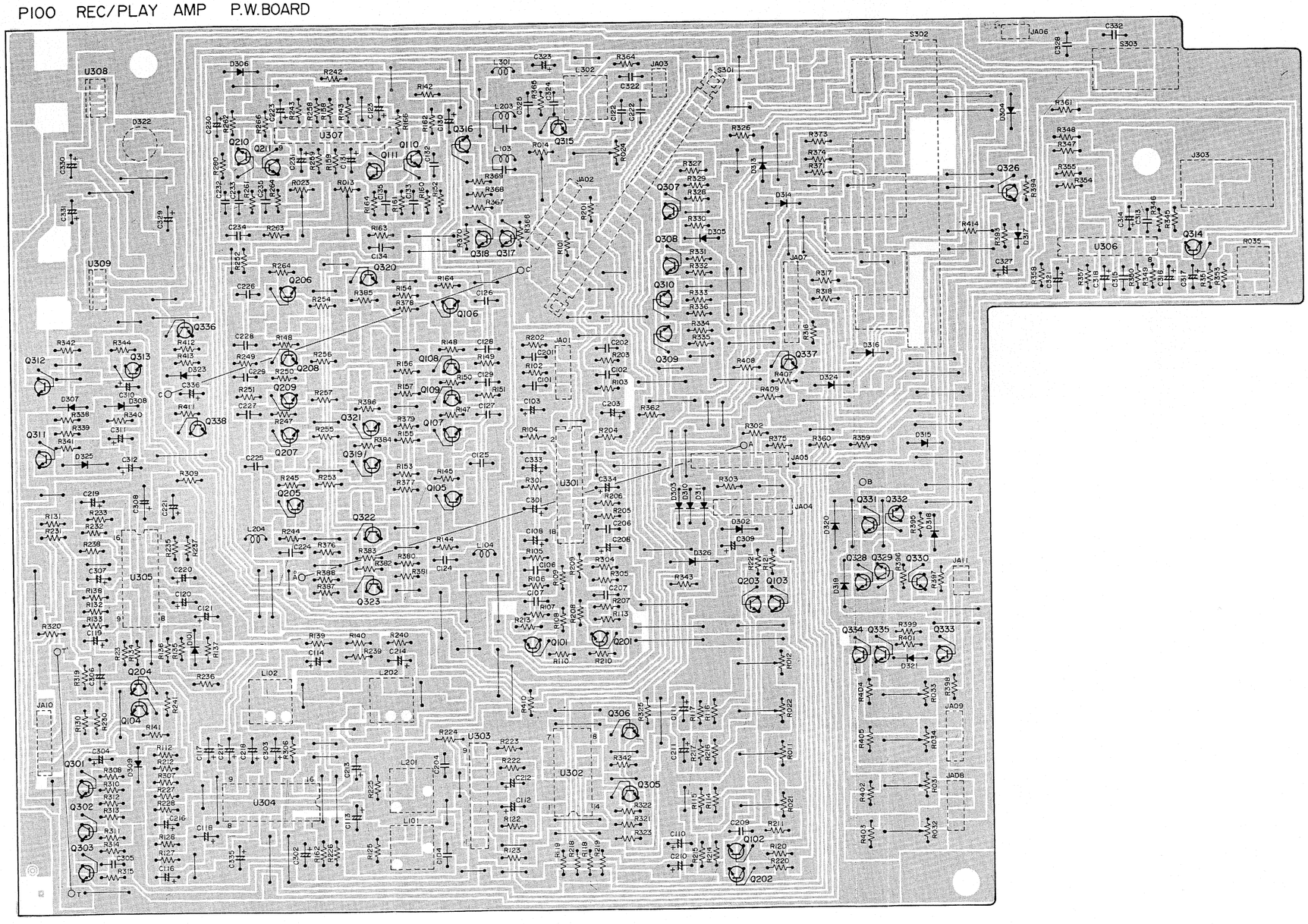
# 8. WIRING DIAGRAM AND PARTS LOCATION

## 8.1 WIRING DIAGRAM (Component Side)

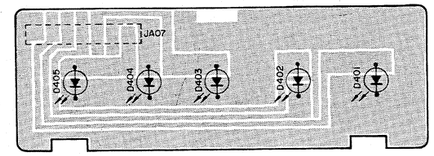


## 8.2 PARTS LOCATION (Pattern Side)

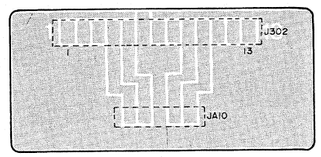
P100 REC/PLAY AMP P.W.BOARD




P200 LED P.W.BOARD




P300 OUTPUT P.W.BOARD





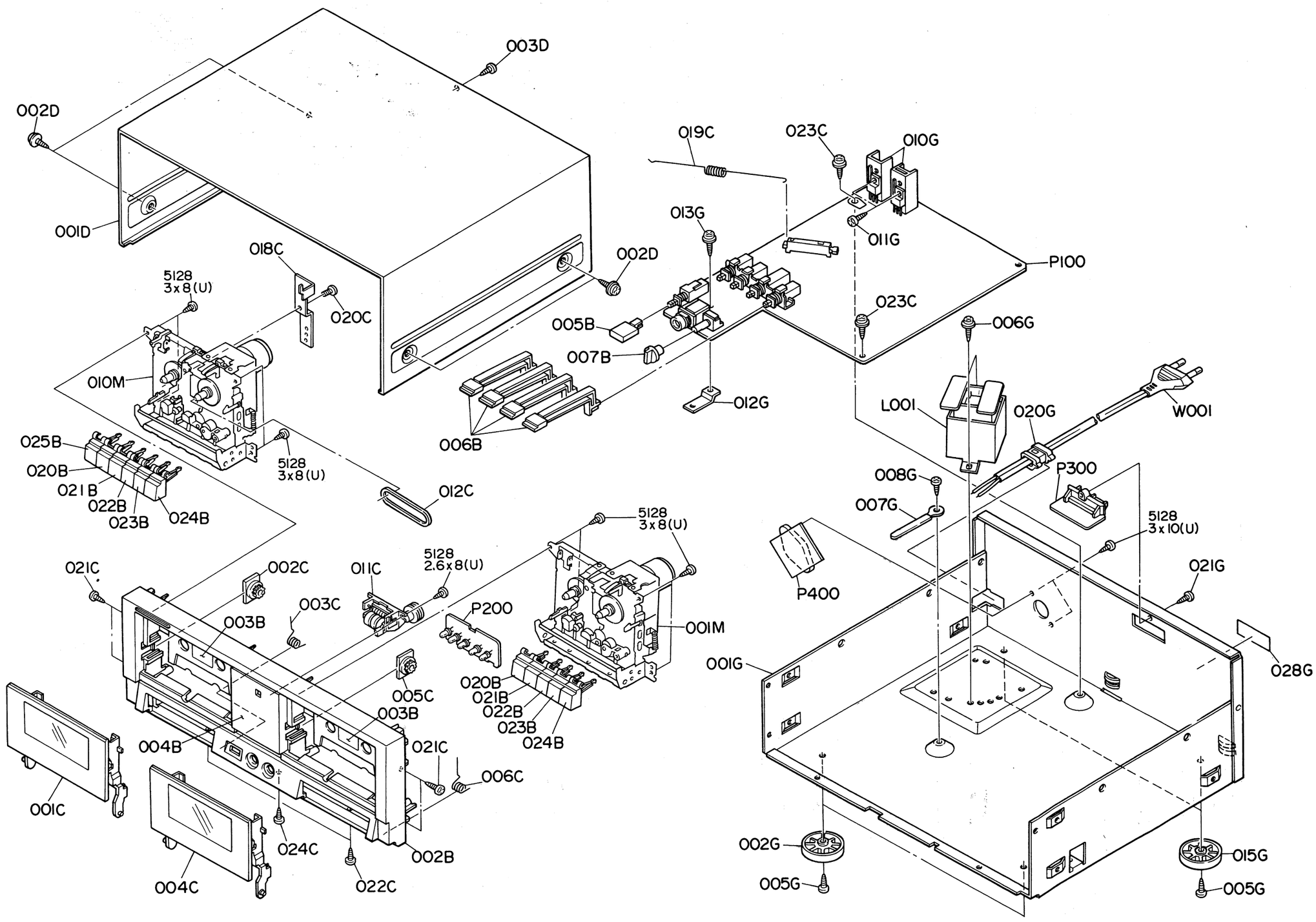




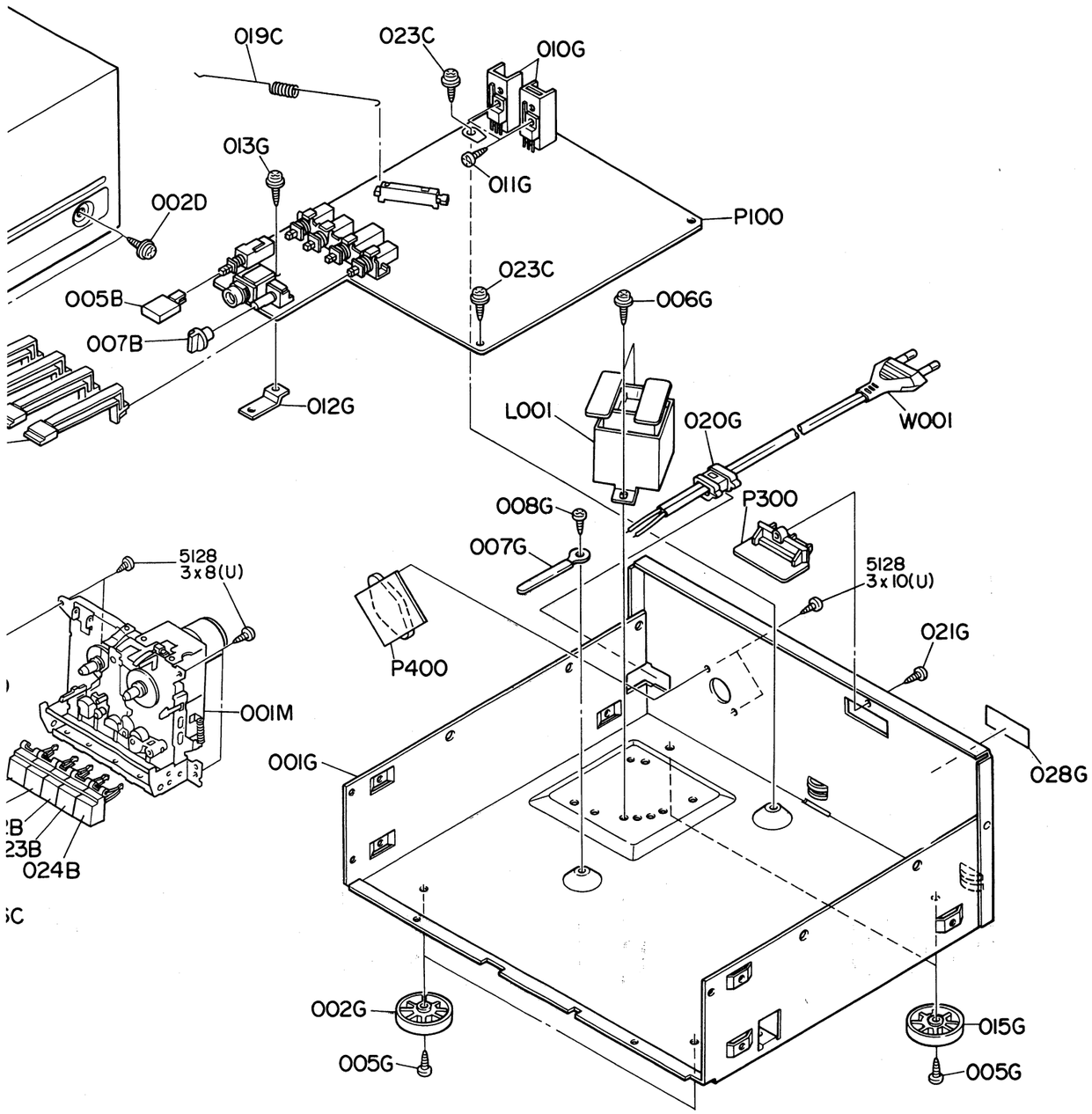

MARA-00498 / Druck 4

# 9. EXPLODED VIEWS AND PARTS LIST

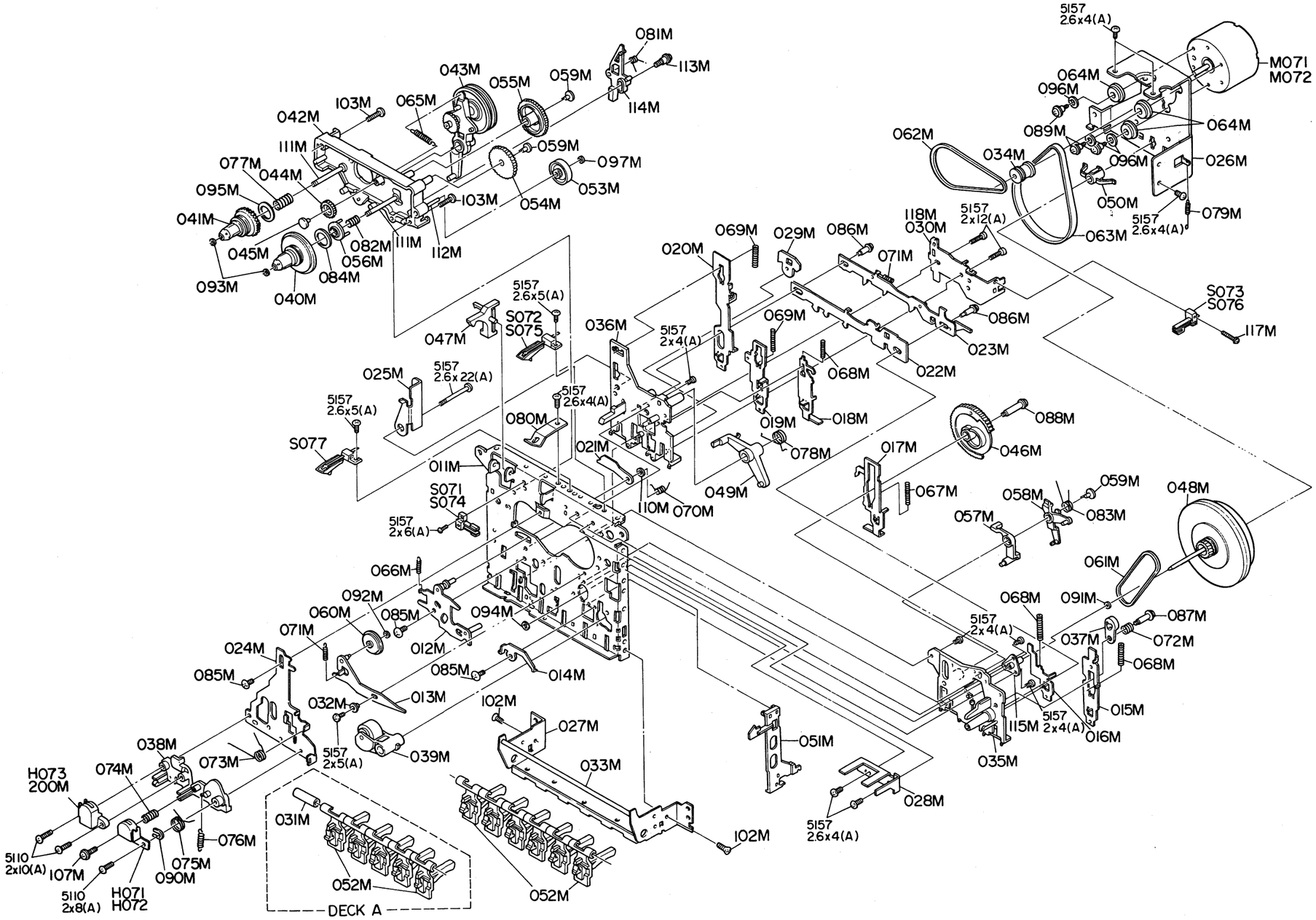
**[C01-99] FRONT PANEL, LID (TOP & BOTTOM COVER), GENERAL PARTS AND PACKING MATERIALS**

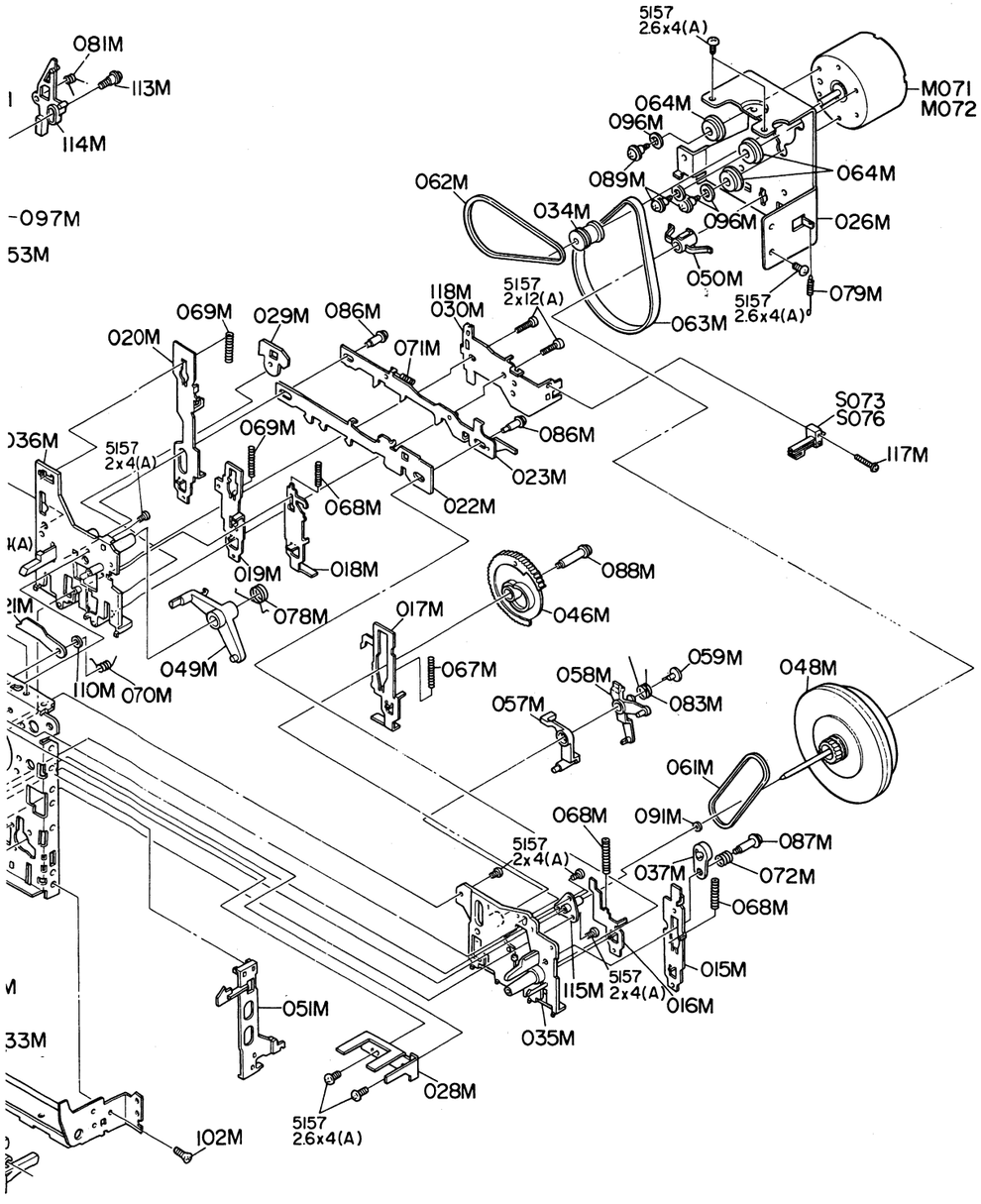


**MATERIALS**




| REF. DESIG. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| 002B | 4822 443 40761 | Front Panel | |
| 003B | 4822 380 20314 | Reflector | |
| 004B | 4822 347 20115 | Indicator | |
| 005B | 4822 410 26911 | Button, Power | |
| 006B | 4822 410 26912 | Button, Push | |
| 007B | 4822 413 41446 | Knob, Level | |
| 020B | 4822 410 26913 | Button, PLAY | |
| 021B | 4822 410 26914 | Button, REW | |
| 022B | 4822 410 26915 | Button, FF | |
| 023B | 4822 410 26916 | Button, STOP/EJECT | |
| 024B | 4822 410 26917 | Button, PAUSE | |
| 025B | 4822 410 26918 | Button, REC | |
| 001C | 4822 443 51157 | Case, Cassette | |
| 002C | 4822 529 10212 | Dumper | |
| 003C | 4822 492 42275 | Spring, Open | |
| 004C | 4822 443 51158 | Case, Cassette | |
| 005C | 4822 529 10212 | Dumper | |
| 006C | 4822 492 42275 | Spring, Open | |
| 011C | 4822 349 50332 | Counter, Tape | |
| 012C | 4822 358 30904 | Belt, Counter | |
| 019C | 4822 492 70162 | Spring, Rec | |
| 020C | 4822 502 13211 | Screw, Rec Lever | |
| 021C | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 022C | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 023C | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 024C | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 001D | 4822 443 62682 | Lid, Top Cover | |
| 002D | 4822 502 13115 | Fin Neck B.T. Screw | B3 x 6 |
| 003D | 4822 502 13114 | Screw | |
| 002G | 4822 462 41269 | Leg (K), Front | |
| 005G | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 006G | 4822 502 13117 | Fin Neck B.T. Screw | B4 x 6 |
| 008G | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 011G | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 013G | 4822 502 30539 | B. Taptite Screw | B3 x 6 |
| 015G | 4822 462 41344 | Leg (K), Rear | |
| ⚠ L001 | 4822 146 21405 | Power Transformer [E] | |

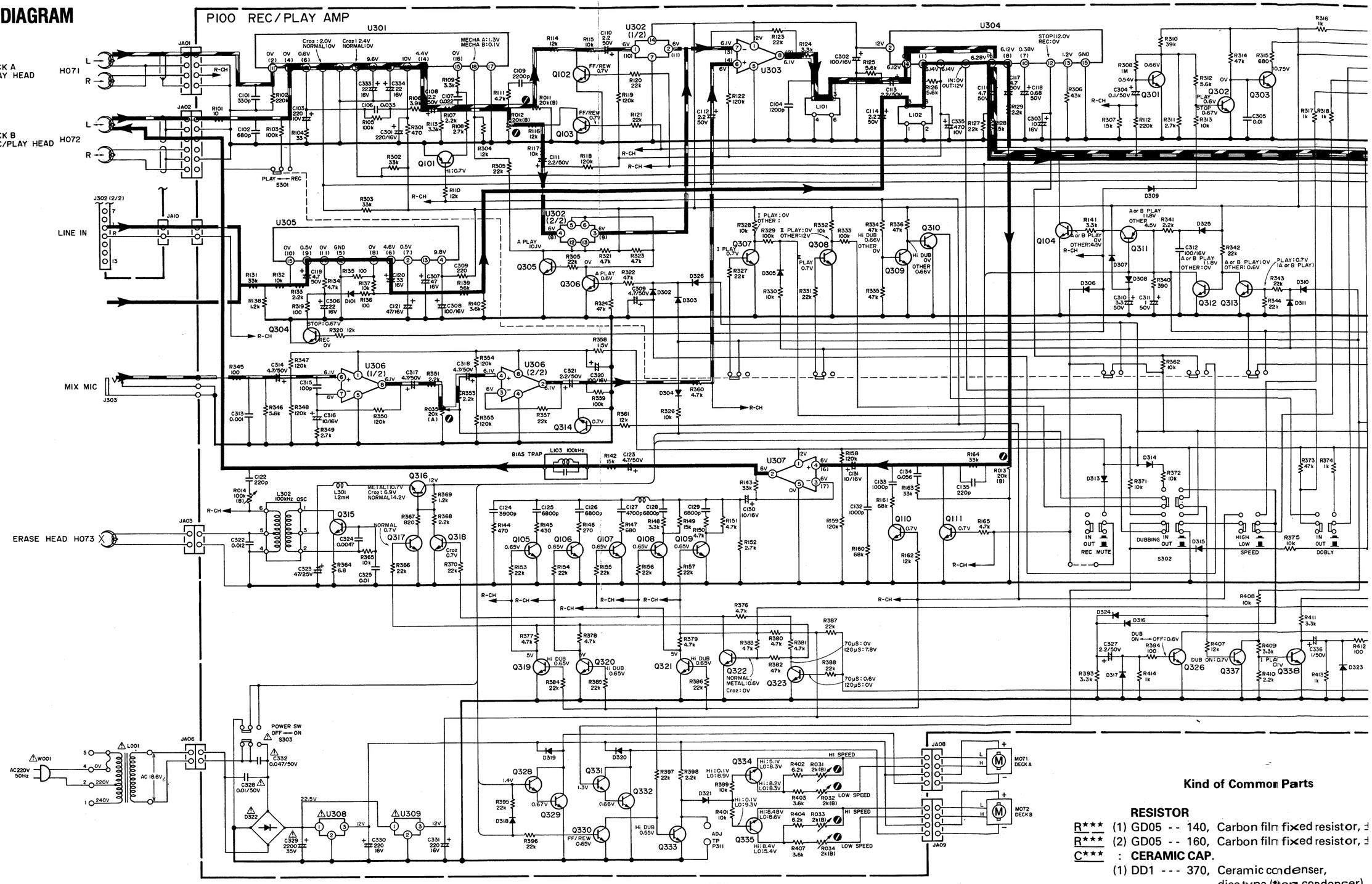

5157 2.6x4(A)
M071 M072
064M
096M
089M
064M
062M
034M
096M
026M
050M
063M
5157 2.6x4(A)
079M
118M 030M
5157 2x12(A)
071M
086M
023M
022M
S073 S076
117M
081M
113M
114M
043M
055M
059M
103M
065M
042M
111M
059M
097M
077M
044M
053M
095M
054M
041M
103M
082M
111M
112M
045M
056M
084M
093M
040M
5157 2.6x5(A)
S072 S075
047M
036M
069M
029M
086M
020M
069M
5157 2x4(A)
025M
5157 2.6x22(A)
068M
5157 2.6x4(A)
080M
019M
018M
088M
5157 2.6x5(A)
S077
021M
078M
046M
017M
011M
049M
067M
S071 S074
110M
070M
059M
058M
048M
5157 2x6(A)
057M
083M
061M
066M
068M
091M
087M
092M
060M
085M
094M
5157 2x4(A)
072M
071M
037M
024M
012M
068M
085M
085M
014M
013M
032M
015M
102M
027M
051M
5157 2x4(A)
038M
5157 2x5(A)
039M
033M
115M
016M
073M
074M
035M
H073 200M
031M
028M
5157 2.6x4(A)
076M
5110 2x10(A)
107M
075M
090M
102M
052M
052M
5110 2x8(A)
H071 H072
DECK A

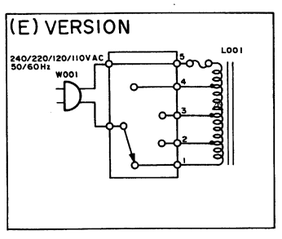


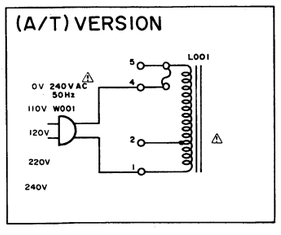

| REF. DESIG. | PART NO. | DESCRIPTION |
|---|---|---|
| 034M | 4822 528 81229 | Pulley, Motor |
| 035M | 4822 402 61203 | Holder (A), Lever |
| 036M | 4822 402 61204 | Holder (B), Lever |
| 038M | 4822 466 92261 | Base Board, Head |
| 039M | 4822 528 70535 | Pinch Roller Assembly |
| 040M | 4822 528 10707 | Reel Assembly, Tension |
| 041M | 4822 528 10708 | Reel Assembly, Supply |
| 042M | 4822 466 92262 | Base Board, Reel |
| 043M | 4822 402 61201 | Arm Assembly, Clutch |
| 044M | 4822 522 32474 | Gear, FF |
| 045M | 4822 532 11663 | Bushing, FF Gear |
| 046M | 4822 522 32475 | Gear (C) |
| 047M | 4822 528 30345 | Cam, Rec Sensor; Deck B |
| 048M | 4822 528 60337 | Flywheel Assembly (Y) |
| 049M | 4822 402 61199 | Arm, Lock |
| 050M | 4822 256 91326 | Holder, Capstan |
| 052M | 4822 402 61205 | Lever, Button |
| 053M | 4822 528 70536 | Pulley, Auto |
| 054M | 4822 522 32476 | Gear, Auto |
| 055M | 4822 522 32477 | Gear, Auto Cam |
| 056M | 4822 528 20618 | Clutch, Auto |
| 057M | 4822 403 53468 | Arm (B), Auto |
| 058M | 4822 403 53469 | Arm, Auto Lock |
| 059M | 4822 532 52034 | Bushing |
| 060M | 4822 528 70537 | Idler, Play |
| 061M | 4822 358 30847 | Belt, Auto |
| 062M | 4822 358 30848 | Belt, FR |
| 063M | 4822 358 30849 | Belt, Drive |
| 064M | 4822 532 52035 | Bushing |
| 065M | 4822 492 51996 | Spring, Clutch Arm |
| 066M | 4822 492 51997 | Spring, Shift Arm |
| 067M | 4822 492 51998 | Spring, FF Lever |
| 068M | 4822 492 51999 | Spring, REW/Pause/Stop Lever |
| 069M | 4822 492 52001 | Spring, Play/Rec Lever |
| 070M | 4822 492 51995 | Spring, Rec Lever; Deck B |
| 071M | 4822 492 52002 | Spring, Cam/Idler |
| 072M | 4822 492 52003 | Spring, Pause Cam |
| 073M | 4822 492 52004 | Spring, Head Chassis |
| 074M | 4822 492 52005 | Spring, Head |
| 075M | 4822 492 52006 | Spring, Pinch Roller |
| 076M | 4822 492 52007 | Spring, Head Chassis Return |
| 077M | 4822 492 32885 | Spring, Back Tension |
| 078M | 4822 492 52008 | Spring, Lock Arm |
| 079M | 4822 492 52009 | Spring, Eject Lever |
| 080M | 4822 492 63996 | Leaf Spring, Pack |
| 081M | 4822 492 52011 | Spring, Auto Sensor |
| 082M | 4822 492 52012 | Spring, Auto Clutch |
| 083M | 4822 492 52013 | Spring, Auto Lock Arm |
| 084M | 4822 528 20619 | Clutch, Auto |
| 085M | 4822 502 13091 | Screw (A) |
| 086M | 4822 502 13092 | Screw (B) |
| 087M | 4822 502 13093 | Screw (C) |
| 088M | 4822 502 13094 | Screw (D) |
| 089M | 4822 502 13095 | Screw, Motor |
| 090M | 4822 532 52033 | Spacer, Head |
| 091M | 4822 532 52025 | Washer, Flywheel |
| 092M | 4822 532 52026 | Washer, Play Idler |
| 093M | 4822 532 52027 | Washer, Reel |
| 094M | 4822 532 52028 | Washer, Flywheel |
| 095M | 4822 532 52029 | Washer, Supply Reel |

| REF. DESIG. | PART NO. | DESCRIPTION |
|---|---|---|
| 096M | 4822 532 52031 | Washer, Motor |
| 097M | 4822 532 52032 | Washer, Auto Pulley |
| 102M | 4822 502 13112 | F. Taptite Screw F2.6 x 5 |
| 103M | 4822 502 13113 | B. Taptite Screw B2.6 x 8 |
| 107M | 4822 502 13102 | Cup Screw M2 x 9 |
| 109M | 4822 502 30537 | B.T. Screw B2.6 x 6 |
| 110M | 4822 530 70122 | RG Ring, E Type ϕ2; Deck B |
| 111M | 4822 535 92491 | Shaft, Reel |
| 112M | 4822 535 92492 | Shaft, Auto Pulley |
| 113M | 4822 535 92493 | Shaft, Auto Sensor Arm |
| 114M | 4822 403 53471 | Arm, Auto Sensor |
| 117M | 4822 403 53473 | B. Taptite Screw B2.6 x 10 |
| 118M | 4822 403 53472 | Bracket, Solenoid; Deck A |
| 200M | 4822 466 92263 | Guide, Dummy Head; Deck A |
| H071 | 4822 249 30135 | Head, Playback; Deck A |
| H072 | 4822 249 10367 | Head, Rec/Play; Deck B |
| H073 | 4822 249 40244 | Head, Erase; Deck B |
| M071 | 4822 361 21137 | D.C. Motor, Deck A |
| M072 | 4822 361 21138 | D.C. Motor, Deck B |
| S071 | 4822 278 90583 | Mini Switch, Leaf; Deck A |
| S072 | 4822 278 90584 | Mini Switch, Leaf; Deck A |
| S073 | 4822 278 90585 | Mini Switch, Leaf; Deck A |
| S074 | 4822 278 90583 | Mini Switch, Leaf; Deck B |
| S075 | 4822 278 90584 | Mini Switch, Leaf; Deck B |
| S076 | 4822 278 90585 | Mini Switch, Leaf; Deck B |
| S077 | 4822 278 90584 | Mini Switch, Leaf; Deck B |

# SCHEMATIC DIAGRAM




**NOTE ON SAFETY:**

**Symbol ⚠ Fire or electrical shock hazard. Only original partrs should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.**

**NOTE:**

**The circuit diagrams show only the Left channel, and the Right channel is omitted.**

**The symbol numbers of the Right channel are set based on those of the Left channel with the relationship as shown below.**

**(The following examples show the symbol names of resistors.)**

| L CH | R CH |
|---|---|
| R010- | R020- |
| R101- | R201- |
| R401- | R501- |

**Components and wiring are subject to change for modification without notice.**

## Kind of Common Parts

**RESISTOR**

R*** (1) GD05 -- 140, Carbon film fixed resistor, ±

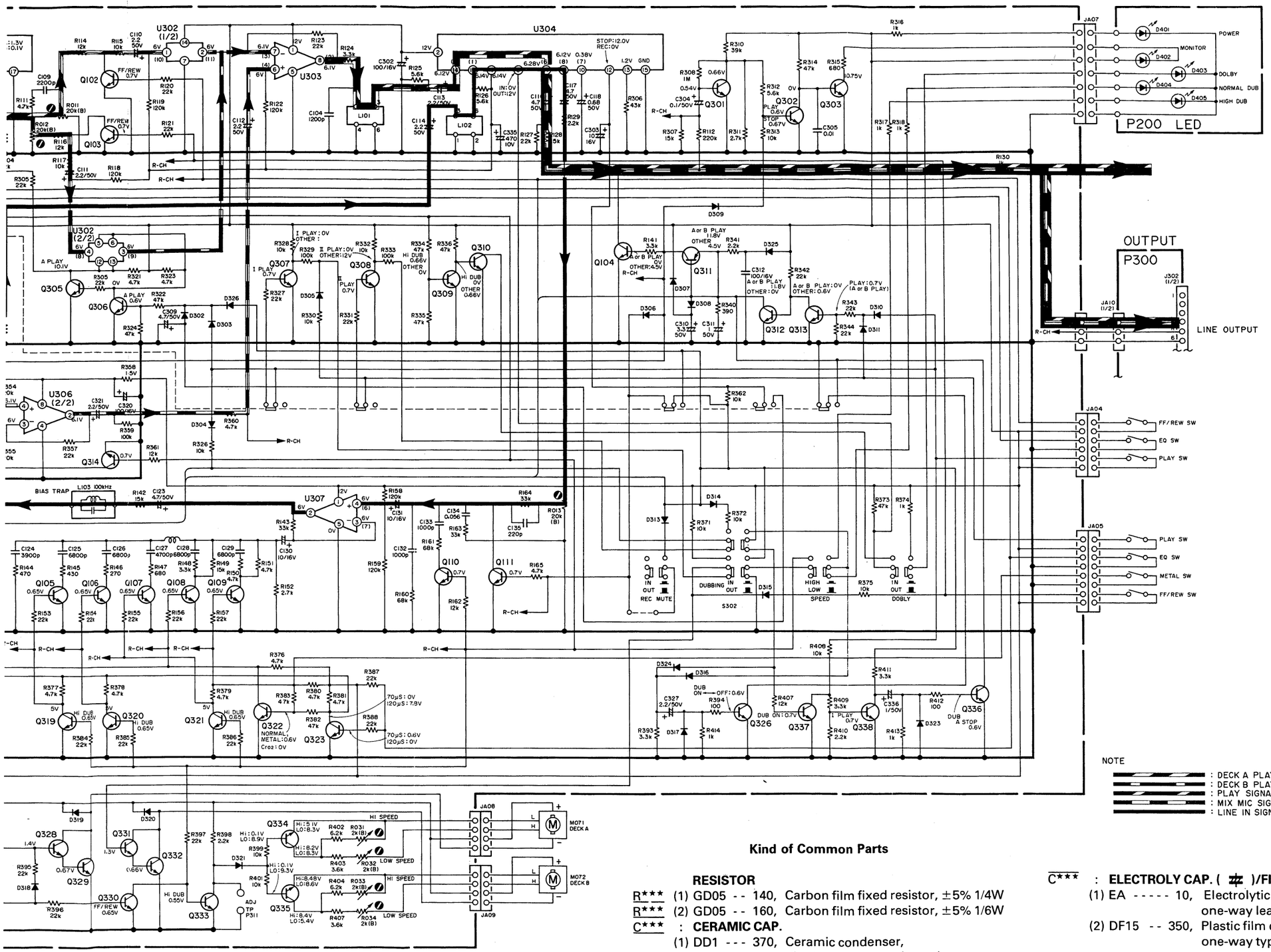
R*** (2) GD05 -- 160, Carbon film fixed resistor, ±

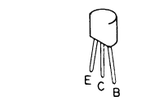
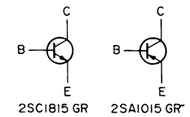
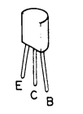
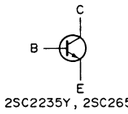
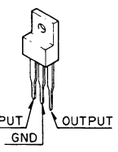
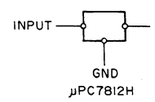
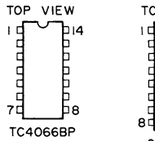
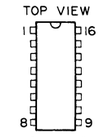
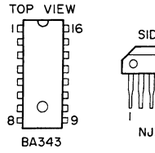
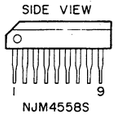
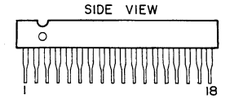
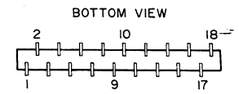
C*** : **CERAMIC CAP.**

(1) DD1 --- 370, Ceramic condenser, disc type (titan condenser) Temp. coef. P350 ~ N1000

C*** : **CERAMIC CAP.**

(1) DK16 -- 300, High dielectric constant cer condenser disc type (titan Temp. cha a. 2B450V




| | |
|---|---|
| Q101 ~ Q111<br>Q301 ~ Q310<br>Q312 ~ Q314<br>Q317 ~ Q323<br>Q326, Q328<br>Q330, Q331<br>Q333 ~ Q338 | |
| 2SC1815 GR |  |
| Q311 | |
| 2SA1015 GR |  2SC1815 GR 2SA1015 GR |
| Q315, Q316 | |
| 2SC2235Y | |
| Q329, Q332 | |
| 2SC2655Y |  2SC2235Y, 2SC2655Y |
| U301 | |
| BA3416BL |  |
| U302 | |
| TC4066BP | |
| U303, U306, U307 | |
| NJM4558S |  |
| U304 | |
| CXA1101P | INPUT OUTPUT GND |
| U305 | |
| BA343 |  INPUT OUTPUT GND |
| U308, U309 | |
| μPC7812H | μPC7812H |
| D101, D326<br>D302 ~ D311<br>D313 ~ D318<br>D321 ~ D324 | TOP VIEW  TC4066BP<br>TOP VIEW  CXA1101P |
| IS1555 | TOP VIEW  BA343 |
| D319, D320, D325 | |
| IN4003 | SIDE VIEW  NJM4558S |
| D322 | |
| PB153M | SIDE VIEW  BOTTOM VIEW  BA3416BL |

NOTE

: DECK A PLAY SIGNAL.
: DECK B PLAY SIGNAL.
: PLAY SIGNAL.
: MIX MIC SIGNAL.
: LINE IN SIGNAL.

**NOTE:**
**The circuit diagrams show only the Left channel, and the Right channel is omitted.**
**The symbol numbers of the Right channel are set based on those of the Left channel with the relationship as shown below.**
**(The following examples show the symbol names of resistors.)**

| L CH | R CH |
|---|---|
| R010- | R020- |
| R101- | R201- |
| R401- | R501- |

**Components and wiring are subject to change for modification without notice.**

## Kind of Common Parts

**RESISTOR**

R*** (1) GD05 -- 140, Carbon film fixed resistor, ±5% 1/4W
R*** (2) GD05 -- 160, Carbon film fixed resistor, ±5% 1/6W

C*** : **CERAMIC CAP.**
(1) DD1 --- 370, Ceramic condenser, disc type (titan condenser) Temp. coeff. P350 ~ N1000 50V

C*** : **CERAMIC CAP.**
(1) DK16 -- 300, High dielectric constant ceramic condenser, disc type (titan variable) Temp. chara. 2B4 50V

C*** : **ELECTROLY CAP. ( ⫢ )/FILM CAP. ( ⫢ )**
(1) EA ----- 10, Electrolytic condenser, one-way lead type, tolerance ±20%
(2) DF15 -- 350, Plastic film condenser, one-way type, Mylar, ±5% 50V

★ In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

**"SERVICE INFORMATION IS FOR USE BY QUALIFIED RERSONNEL ONLY – ANY MISADJUSTMENT OR MISALIGNMENT MAY BE TREATED AS A NON-WARRANTY REPAIR BY ANY MARANTZ SERVICE CENTER–"**

**: hazard. Only original partrs art marked with symbol ⚠. ution (other than original electrical shock hazard.**

# 10. ELECTRICAL PARTS LIST

## ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R***: (1) GD05---140, Carbon film fixed resistor, ±5%, 1/4W
R***: (2) GD05---160, Carbon film fixed resistor, ±5%, 1/6W

① — Resistance value

Examples

① Resistance value

| | | | |
|---|---|---|---|
| 0.1Ω...001 | 10Ω...100 | 1kΩ...102 | 100kΩ...104 |
| 0.5Ω...005 | 18Ω...180 | 2.7kΩ...272 | 680kΩ...684 |
| 1Ω...010 | 100Ω...101 | 10kΩ...103 | 1MkΩ...105 |
| 6.8Ω...068 | 390Ω...391 | 22kΩ...223 | 4.7MkΩ...475 |

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C***: CERAMIC CAP.

(1) DD1---370, Ceramic condenser
Disc type
①② Temp. coeff. P350 ~ N1000, 50V
Capacity value
Tolerance

Examples

① Tolerance (Capacity deviation)
±0.25pF...0
±0.5pF...1
±5%...5

* Tolerance of COMMON PARTS handled here are as follows:
0.5pF ~ 5pF...±0.25pF
6pF ~ 10pF...±0.5pF
12pF ~ 560pF...±5%

② Capacity value

| | | |
|---|---|---|
| 0.5pF...005 | 3pF...030 | 100pF...101 |
| 1pF...010 | 10pF...100 | 220pF...221 |
| 1.5pF...015 | 47pF...470 | 560pF...561 |

C***: CERAMIC CAP.

(1) DK16---300, High dielectric constant ceramic condenser
Disc type
① Temp. chara. 2B4, 50V
Capacity value

Example

② Capacity value

| | | |
|---|---|---|
| 100pF...101 | 1000pF...102 | 10000pF...103 |
| 470pF...471 | 2200pF...222 | |

C***: ELECTROLY CAP. ( ⧺ ), FILM CAP. ( ⧻ )

(1) EA------10, Electrolytic condenser
One-way lead type, Tolerance ±20%
①② Dielectric strength
Capacity value

Examples

① Capacity value

| | | |
|---|---|---|
| 0.1μF...104 | 4.7μF...475 | 100μF...107 |
| 0.33μF...334 | 10μF...106 | 330μF...337 |
| 1μF...105 | 22μF...226 | 1100μF...108 |
| | | 2200μF...228 |

② Working voltage

| | |
|---|---|
| 6.3V...006 | 25V...025 |
| 10V...010 | 35V...035 |
| 16V...016 | 50V...050 |

(2) DF15---350, Plastic film condenser
One-way type, Mylar ±5% 50V
① Capacity value

Examples

① Capacity value

| | |
|---|---|
| 0.001μF (1000pF)...102 | 0.1μF...104 |
| 0.0018μF.....182 | 0.56μF...564 |
| 0.01μF.....103 | 1μF...105 |
| 0.015μF.....153 | |

| REF. DESIG. | PART NO. | DESCRIPTION |
|---|---|---|
| | | **P100-MAIN CIRCUIT BOARD** |
| | | **P100-CAPACITORS** |
| R011 | 4822 100 10474 | 20KΩ, Trimming |
| R012 | 4822 100 10474 | 20KΩ, Trimming |
| R013 | 4822 100 10474 | 20KΩ, Trimming |
| R014 | 4822 100 10052 | 100KΩ, Trimming |
| R021 | 4822 100 10474 | 20KΩ, Trimming |
| R022 | 4822 100 10474 | 20KΩ, Trimming |
| R023 | 4822 100 10474 | 20KΩ, Trimming |
| R024 | 4822 100 10052 | 100KΩ, Trimming |
| R031 | 4822 100 20191 | 2KΩ, Trimming |
| R032 | 4822 100 20191 | 2KΩ, Trimming |
| R033 | 4822 100 20191 | 2KΩ, Trimming |
| R034 | 4822 100 20191 | 2KΩ, Trimming |
| R035 | 4822 101 30584 | 20KΩ, Variable |
| | | **P100-SEMICONDUCTORS** |
| D101 | 4822 130 31018 | Diode 1S1555 |
| D201 | 4822 130 31018 | Diode 1S1555 |
| D302 ~ D311 | 4822 130 31018 | Diode 1S1555 |
| D313 ~ D318 | 4822 130 31018 | Diode 1S1555 |
| D319 | 4822 130 31878 | Diode IN4003 |
| D320 | 4822 130 31878 | Diode IN4003 |
| D321 | 4822 130 31018 | Diode 1S1555 |
| ⚠D322 | 4822 130 81219 | Diode PB153M |
| D323 | 4822 130 31018 | Diode 1S1555 |
| D324 | 4822 130 31018 | Diode 1S1555 |
| D325 | 4822 130 31878 | Diode IN4003 |
| D326 | 4822 130 31018 | Diode 1S1555 |
| Q101 ~ Q112 | 4822 130 43793 | Transistor 2SC1815GR |
| Q201 ~ Q205 | 4822 130 43793 | Transistor 2SC1815GR |
| Q206 ~ Q212 | 4822 130 43793 | Transistor 2SC1815GR |
| Q301 ~ Q310 | 4822 130 43793 | Transistor 2SC1815GR |
| Q311 | 4822 130 42959 | Transistor 2SA1015Y |
| Q312 | 4822 130 43793 | Transistor 2SC1815GR |
| Q313 | 4822 130 43793 | Transistor 2SC1815GR |
| Q314 | 4822 130 43793 | Transistor 2SC1815GR |
| Q315 | 4822 130 43226 | Transistor 2SC2235Y |
| Q316 | 4822 130 43226 | Transistor 2SC2235Y |
| Q317 ~ Q326 | 4822 130 43793 | Transistor 2SC1815GR |
| Q328 | 4822 130 43793 | Transistor 2SC1815GR |
| Q329 | 4822 130 41843 | Transistor 2SC2655Y |
| Q330 | 4822 130 43793 | Transistor 2SC1815GR |
| Q331 | 4822 130 43793 | Transistor 2SC1815GR |
| Q332 | 4822 130 41843 | Transistor 2SC2655Y |
| Q333 ~ Q338 | 4822 130 43793 | Transistor 2SC1815GR |

| REF. DESIG. | PART NO. | DESCRIPTION |
|---|---|---|
| U301 | 4822 209 71951 | IC BA3416BL |
| U302 | 4822 209 83067 | IC TC4066BP |
| U303 | 4822 209 83067 | IC TC4066BP |
| U304 | 4822 209 72546 | IC CXA1101P |
| U305 | 4822 209 82434 | IC BA343 |
| U306 | 4822 209 73303 | IC NJM4558S |
| U307 | 4822 209 73303 | IC NJM4558S |
| ⚠U308 | 4822 209 83066 | IC μPC7812H |
| ⚠U309 | 4822 209 83066 | IC μPC7812H |
| | | **P100-MISCELLANEOUS** |
| J303 | 4822 267 31036 | Jack, Mic |
| L101 | 4822 157 53559 | L.C. Filter 100KHz |
| L102 | 4822 157 53558 | L.C. Filter MPX |
| L103 | 4822 157 53563 | L.C. Filter 100KHz |
| L104 | 4822 157 53565 | Choke Coil 8.2mH |
| L201 | 4822 157 53559 | L.C. Filter 100KHz |
| L202 | 4822 157 53558 | L.C. Filter MPX |
| L203 | 4822 157 53563 | L.C. Filter 100KHz |
| L204 | 4822 157 53565 | Choke Coil 8.2mH |
| L301 | 4822 157 53564 | Choke Coil 1.2mH |
| L302 | 4822 157 53555 | OSC Transformer 100KHz |
| S301 | 4822 277 21291 | Slide Switch |
| S302 | 4822 276 12535 | Push Switch |
| ⚠S303 | 4822 276 12536 | Push Switch |
| | | **P200-LED CIRCUIT BOARD** |
| D401 ~ D405 | 4822 130 80934 | L.E.D. LTL-307EE |
| | | **P300-AUDIO TERMINAL CIRCUIT BOARD** |
| J302 | 4822 267 50876 | Terminal, 13P |
| | | **P400-VOLTAGE SELECTOR CIRCUIT BOARD** |
| ⚠J401 | 4822 266 30327 | Voltage Selector |

**NOTE ON SAFETY:**
**Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.**